

# Electronic device circuit breaker - CBM E4 24DC/0.5-10A NO-R - 2905743

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Multi-channel, electronic device circuit breaker with active current limitation for protecting four loads at 24 V DC in the event of overload and short circuit. With nominal current assistant and electronic locking of the set nominal currents. For installation on DIN rails.

## Why buy this product

- For protection against voltage dips caused by overload and short circuit
- Precise nominal current levels of 0.5 to 10 A
- Integrated dynamic current limitation
- Electronic locking mechanism to increase system safety
- Early warning when exceeding 80% of the set nominal current per channel
- Supply up to 40 A possible
- Sophisticated remote signaling concept enables monitoring from any location
- Slim design

## Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 992350
GTIN	4046356992350
Weight per Piece (excluding packing)	234.600 g
Custom tariff number	85362010
Country of origin	Germany

## Technical data

### Dimensions

Height	130 mm
Width	41 mm
Depth	121 mm

### Ambient conditions

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## Technical data

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 70 °C (Startup at -40 C type-tested)
	-25 °C ... 65 °C (for UL 2367)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Humidity test	240 h, 95% RH, 40°C
Altitude	6000 m
Shock (operation)	30g
Degree of protection	IP20

### General

Mounting type	DIN rail: 35 mm
Protection class	III
Degree of pollution	2
Type	DIN rail module, one-piece

### Electrical data

Fuse type	electronic
Rated surge voltage	0.5 kV
Operating voltage	18 V DC ... 30 V DC
Rated voltage	24 V DC
Rated current $I_N$	max. 40 A DC
	max. 40 A DC (Per terminal position)
	0.5 / 1 / 2 / 4 / 6 / 10 A DC (adjustable per output channel)
Measuring tolerance I	typ. 40 % (0.5 ... 1 A)
	typ. 10 % (2 - 10 A)
Rated insulation voltage $U_i$	30 V (Load circuit)
Feedback resistance	max. 35 V DC
Switch-on delay	0.1 s (per output channel)
	Remote indication contact
Required backup fuse	not required, integrated failsafe element
Internal output fuse	15 A DC (per output channel)
Active current limitation	typ. $2.0 \times I_N$ (0.5 - 1 A)
	typ. $1.5 \times I_N$ (2 - 10 A)
Status display	LED (green, yellow, red)
Efficiency	> 99 %
Closed circuit current $I_0$	typ. 42 mA
Power dissipation	1 W (No-load operation)
	9 W (Nominal operation)
Module initialization time	3.3 s
Waiting time after switch off of a channel	10 s (of overload / short circuit)
Temperature derating	40 A DC (at 70°C (65°C for UL 2367))

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## Technical data

### Electrical data

Tripping method	E (electronic)
Dielectric strength	max. 30 V DC (Load circuit)
Contact type	without electrical isolation
MTBF (IEC 61709, SN 29500)	2001962 h (at 25 °C)
	1292135 h (at 40 °C)
	653352 h (at 60 °C)
Shutdown time load circuit	0.02 s ( $> 1.3 \times I_N$ )
	30 s (1,1 ... 1,3 $\times I_N$ )
Undervoltage shutdown load circuit	$\leq 17.8$ V DC (active)
	$\geq 19$ V DC (inactive)
Surge voltage shutdown load circuit	$\geq 30.5$ V DC (active)
	$\leq 29.5$ V DC (inactive)
Max. capacitive load load circuit	75000 $\mu$ F (per channel at 24 V DC)
Output voltage status output	24 V DC
Output current status output	max. 20 mA (when $I > 80\%$ at at least one channel)
Input voltage reset input	7 V DC ... 30 V DC (Falling edge)
Vibration resistance, frequency	15 Hz ... 150 Hz
Vibration resistance, acceleration	39.2 m/s <sup>2</sup>
Vibration resistance, test duration	90 min.

### Remote indication contact

Connection name	Remote indication circuit
Switching function	N/O contact
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	1.5 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
DC operating voltage	0 V DC ... 30 V DC
DC operating current	1 mA DC ... 100 mA

### Connection data

Connection name	Main circuit IN+
Connection method	Push-in connection
Stripping length	18 mm
Conductor cross section solid	0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross section AWG	20 ... 4
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.75 mm <sup>2</sup> ... 10 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.75 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Connection name	Main circuit IN-

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## Technical data

### Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Connection name	Main circuit OUT
Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.25 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible, with ferrule without plastic sleeve	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>

### Standards and Regulations

Standards/specifications	EN 61000-6-2
	EN 61000-6-3
	EN 60068-2-6
	EN 60068-2-11
	EN 60068-2-78

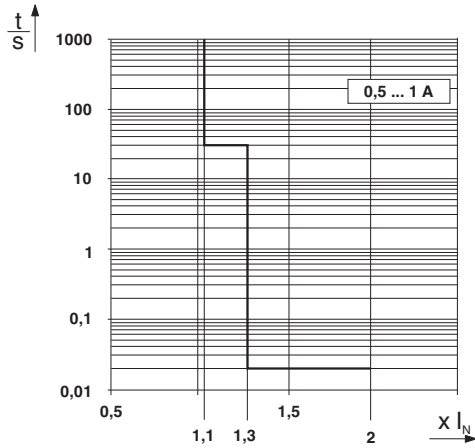
### Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

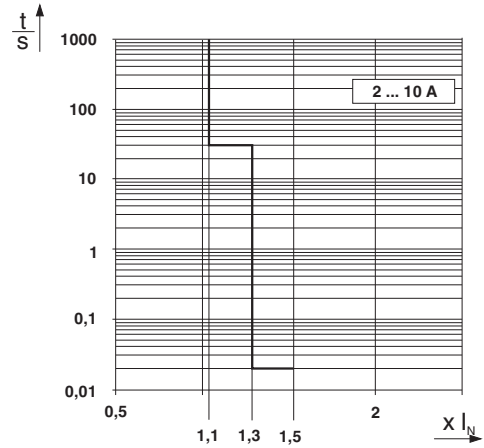
# Electronic device circuit breaker - CBM E4 24DC/0.5-10A NO-R - 2905743

Diagram



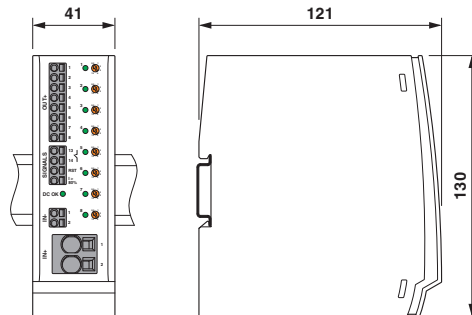
Trigger characteristic in the DC range

Diagram



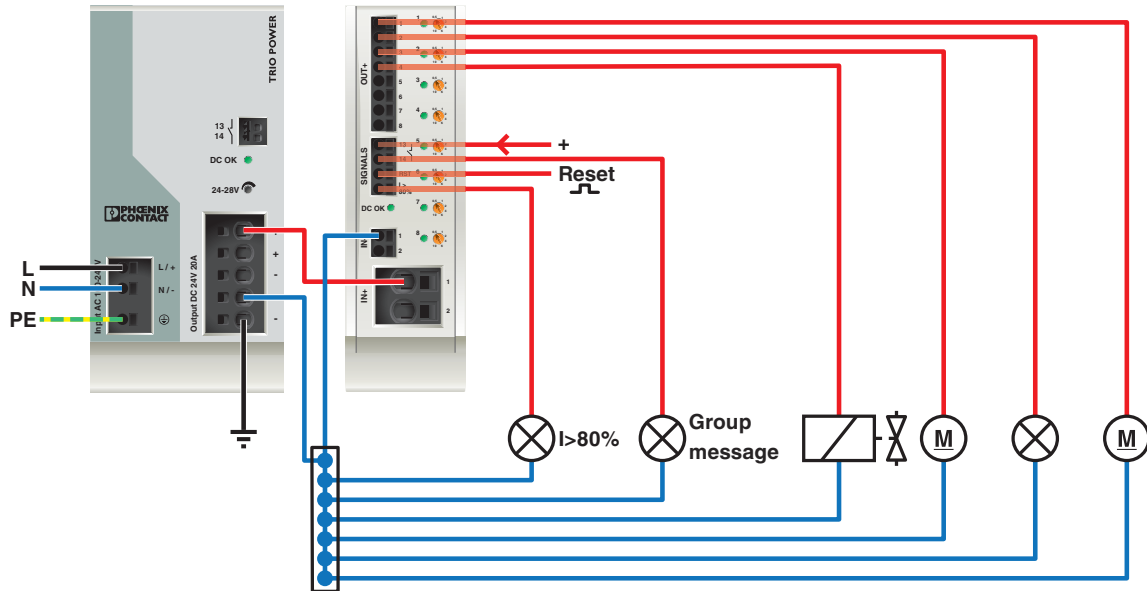
Trigger characteristic in the DC range

Dimensional drawing



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Application drawing



## Classifications

eCl@ss

eCl@ss 5.1	27141116
eCl@ss 6.0	27141116
eCl@ss 8.0	27141116
eCl@ss 9.0	27141116

ETIM

ETIM 5.0	EC000899
ETIM 6.0	EC000899

UNSPSC

UNSPSC 13.2	39121410
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## Approvals

Approvals

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UL Listed / cUL Listed / UL Recognized / EAC / DNV GL / cULus Listed

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## Approvals

Ex Approvals

UL Recognized / UL Listed / cUL Listed / cULus Listed

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 317172
EAC			RU C-DE.A*30.B01561
DNV GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	TAA00000U2
cULus Listed			

## Accessories

Accessories

Power supply

Power supply unit - TRIO-PS-2G/1AC/24DC/3/C2LPS - 2903147



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 1-phase, output: 24 V DC/3 A C2LPS

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### Accessories

Power supply unit - TRIO-PS-2G/1AC/24DC/5 - 2903148



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 1-phase, output: 24 V DC/5 A

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Power supply unit - TRIO-PS-2G/1AC/24DC/10 - 2903149



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single phase, output: 24 V DC/10 A

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Power supply unit - TRIO-PS-2G/1AC/24DC/20 - 2903151



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: single-phase, output: 24 V DC/20 A

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Power supply unit - TRIO-PS-2G/3AC/24DC/5 - 2903153



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/5 A

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Power supply unit - TRIO-PS-2G/3AC/24DC/10 - 2903154



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/10 A

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### Accessories

Power supply unit - TRIO-PS-2G/3AC/24DC/20 - 2903155



Primary-switched TRIO POWER power supply with push-in connection for DIN rail mounting, input: 3-phase, output: 24 V DC/20 A